

Amendments to the Drawings:

The attached sheets of drawings includes changes to Figure 3 and 7 that respectively insert a reference character in each of the amended figures without in any way changing the substance of the figures. These sheets, which include Figures 3 and 7, replace the original sheets including Figures 3 and 7. In Figure 3, previously omitted reference character 128 has been added and in Figure 7, reference character 86 has been added to specifically identify the cam previously shown in the drawing and described in the specification. A corresponding amendment has been made to the specification to include reference character 86 on the last paragraph on page 8.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

Remarks/Arguments:

Claim 19 has been withdrawn from consideration as the result of an earlier restriction requirement. Applicants reserve the right to file a divisional application during the further pendency of this application.

In paragraph 3 of the Office action, the drawings were objected to under 37 CFR 1.83(a). The Examiner was of the opinion that the "remotely operated cam" was not shown in the drawings. Figure 7 has been amended to include reference character 86 which specifically identifies the remotely operated cam. Accordingly, the amendment to the drawing does not add any new subject matter, but clarifies where in the figure the remotely operated cam is illustrated. Corrected drawing sheets are appended hereto as the Attachment.

In paragraph 5 of the Office action, claim 13 was rejected under 35 USC § 112, second paragraph, as being indefinite. The Examiner asserted it's unclear in line 3 whether a "first track" is included in an "arm" or an "elongated dimension". Claim 13 clearly states starting on the first line that the laterally extending arm has an elongated dimension and that dimension of the laterally extending arm is in the direction of the downwardly directed angle. The next phrase in claim 13 states that a first track extends along at least a portion of the elongated dimension. The only mention of an elongated dimension previous to that is with regard to the dimension of the laterally extending arm. However, to further prosecution, Applicants have amended the claim to specifically state that "a first track extending along at least a portion of the elongated dimension of the laterally extending arm". Hopefully, this will clarify the matter for the Examiner.

In paragraph 7 of the Office action, claims 1-14 are rejected under 35 USC § 102(b) as being anticipated by Burrows et al. (US 5,878,099). To support this rejection the Examiner asserted in paragraph 8 of the Office action that with respect to claim 1:

Burrows et al. '099 discloses a system for delivering a tool 100 comprising a motorized trolley 118 riding on an underlining tubular body upper lip 106, 110, vertical column assembly 134 having a first part 132, 138, rotatably mounted on a trolley 118 and a laterally extending arm 136 wherein rotating a vertical

column assembly 134 positions a laterally extending arm peripheral end portion 136, 140 on an underlying tubular body inboard side or on an underlying tubular body outboard side (col. 3, lines 18-26), an extendable pole assembly 122 having a pole first part 122 attached to a laterally extending arm 148, and a pole second part 122 for extending a pole second part 122, tool (col. 3, lines 8-10) attached to a pole second part 122.

Applicants' claim 1 calls for a system for delivering a tool to opposite sides of an underlying tubular body. The reference to Burrows et al. is directed to a delivery system which enables repeatable positioning of inspection or other service tools at a specified region on the inner diameter of a shroud wall (column 3, lines 8 through 12). The motorized trolley 118 that the Examiner's cites in Burrows et al. is not a motorized trolley assembly at all and doesn't ride on an upper lip of the underlying tubular body. The positioning unit 118 is stationarily supported on the lip of the shroud by horizontal member 124 with slots that attach to the seismic pins on the shroud as shown in Figure 4 (column 3, lines 30 through 45 and column 4, lines 47 through 61). The positioning unit 118 supports a vertical adjustment screw 132 that is manually operated to vertically position a rail assembly 122 on which the operable tool lies. The rail assembly is supported from a mast 134 that is connected to coupling 130 on the positioning assembly 118. In order for the delivery system 100, which includes the positioning unit 118 to be moved it has to be hoisted by the square shaft 127 through the use of a remotely operated handling pole as explained with regard to Figures 4A and 4B (column 4, lines 29 through 37). Accordingly, Burrows et al. does not provide at all for a motorized trolley assembly configured to ride on an upper lip of the underlying tubular body as asserted by the Examiner.

Next, the Examiner argues that Burrows et al. teaches a vertical column assembly 134 having the first part 132, 138 rotatably mounted on a trolley 118. As explained above, 118 is a vertical positioning system for the mast 134 and not a trolley. Furthermore, the mast 134 is not rotatable on the positioning system 118. As previously mentioned the Burrows et al. system is not intended to rotate to the outer surface of the shroud but is intended to operate only within the inner diameter of the shroud. Accordingly, Applicants' claim 1 distinguishes for this additional reason. More specifically, Applicants' claim 1 calls for "a substantially vertically

supported column assembly having a first part rotatably mounted on the trolley assembly and having at least one laterally extending arm spaced from the first part such that rotation of the column assembly positions a peripheral end portion of the laterally extending arm on an inboard side or an outboard side of the underlying tubular body. As stated above, there is no comparable element taught in Burrows et al.

Applicants' claim 1 goes on to call for an extendable pole assembly having a first part attached to the laterally extending arm and a second part spaced from the first part of the extendable pole assembly for extending the second part of the extendable pole assembly to a preselected elevation below the upper lip of the underlying tubular body. In contrast, the laterally extending arm 136 of Burrows et al., that the Examiner refers to, is not coupled to an extendable pole assembly but, in contrast, is coupled to a rotatable rail assembly 122 that is not extendable. The rail assembly 122 rotates to a desired position and supports a tool that is free to ride along the rail assembly.

As a final element, Applicants' claim 1 calls for a tool adjustably attached to the second part of the extendable pole assembly whereby the tool may be tilted or rotated while at the preselection elevation below the upper lip of the underlying tubular body on either the inboard side or the outboard side of the tubular body. As previously stated the positioning system of Burrows et al. does not have any capability for positioning the tool on the outboard size of the tubular body.

As stated in *In re Marshall*, 578 F2d 301, 198 USPQ 344 (C.A.F.C., 6/30/78) "to constitute an anticipation all material elements recited in a claim must be found in one unit of prior art... An accidental or unwitting duplication of an invention cannot constitute anticipation". As noted above Burrows et al fails to teach many of the elements of Applicants' claim 1. Accordingly, Applicants' claim 1 should not rightfully be considered anticipated by the teachings of Burrows et al.

Claim 2 of the instant application states that the column assembly includes a second stationary part and a remotely positionable camera mounted on an upper portion of the second stationary part above the first part of the column assembly to provide an overview of the tool as the tool is moved. Burrows et al. has no

comparable teaching. The reference characters that the Examiner cites are to the tools support platform and not to a second camera that is positionable to monitor the tool platform from above.

In paragraph 10 of the Office action the Examiner states that Burrows et al. discloses a camera at column 3, lines 8-10 that moves vertically. What Burrows et al. actually states in column 3, lines 8-10 is that

"Generally, and in one aspect, the present invention is directed to a delivery system which enables repeatable positioning of inspection or other service tools at a specified region on an inner diameter of a shroud wall between a top guide and core plate in a boiling water nuclear reactor."

There is no teaching in Burrows et al. of a camera mounted on an upper portion of a second stationary part above the first part of the column that supports the tool to monitor the tool, wherein the camera is movable in the vertical direction to an elevation at least equal to the uppermost elevation of the column assembly as called for in claim 3.

Claim 4 of the instant application is rejected in paragraph 11 of the Office action. Claim 4 calls for a substantially continuous track assembly sized and configured to be supported on and around the upper lip of the underlying body and wherein the motorized trolley assembly rides on the track assembly. The Examiner asserted that Burrows et al. teaches a continuous track assembly 114 on which the positioning unit 118 rides. Reference character 114 in Burrows et al. refers to a top guide 114 which is a grid structure and not a rail on which a trolley rides. The positioning unit 118 is actually attached to the shroud 112 through the seismic pins previously discussed and the grid structure 114 does not appear at all to be connected to the positioning system 118. Both the grid structure 114 and the positioning fixture 118 of Burrows et al. appear to both be supported on the lip of the shroud and neither rides on the other. Accordingly, claim 4 should not rightfully be considered as being anticipated by the teachings of Burrow et al.

Claims 5 through 8 teach different aspects of the track assembly and the trolley's interaction with the track assembly. Since there is no corresponding

teachings in Burrows et al. claims 5 through 8 should distinguish for the individual limitations that they introduce.

Paragraph 16 of the Office action rejects claim 9 as being anticipated by Burrows et al. asserting that Burrows et al. discloses a column assembly first part 132, 138 that rotates 180°. Reference character 132 in Burrows refers to the elongated screw that is manually turned to position the mast 134 in the vertical direction. The mast does not rotate. Neither is the tool positionable on either side of the shroud. Reference character 138 is identified in column 3, line 50, as one end of the mast 134. The reference characters appear to have no relevance to the teachings of claim 9. Accordingly, claim 9 should not rightfully be considered as anticipated by the reference.

In paragraph 17 of the Office action, claim 10 is rejected over the teachings of Burrows et al. Claim 10 is dependent upon claim 1 and distinguishes for the reasons mentioned above in addition to the individual limitations that it introduces.

Claim 11 is rejected in paragraph 18 of the Office action as being anticipated by Burrows et al. The Examiner relied upon the teachings of the laterally extending arms 136 in Burrows et al. However, the laterally extending arms 136 in Burrows et al. do not extend in a downwardly directed angle as called for in claims 11 and 12 but extend from the mast in an upwardly or horizontally directed angle to position the tool track 122. Accordingly, Applicants' claims 11 and 12 distinguish over the teachings of Burrows et al. for the reasons stated with regard to claim 1 from which they depend in addition to the individual limitations that they introduce.

Claims 13 and 14 define tracks along the elongated dimension of the laterally extending arm upon which the pole assembly is supported and movable. There is no such teaching in Burrows et al.

Claims 15 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Burrows et al. (US 5,878,099) as applied to claim 1 above, and further in view of Hippach (US 3,638,806). Burrows et al. was relied upon as stated above. Hippach was asserted to disclose:

“...a system for delivering a tool 10 having an extendable pole assembly 15, 22 which includes nested square telescoping sections 22 (col. 3, lines 68-72) to increase the

weight the pole 15 is able to support at its end without sacrificing extendable pole length (col. 1, lines 5-65)."

The Examiner concluded it was obvious to apply the teachings of Burrows et al. and Hippach to meet the limitations of Applicants' claims 15 and 16.

Claim 15 calls for the delivery system of claim 1 wherein the extendable pole assembly includes a plurality of nested telescoping sections and claim 16 defines the sections as having a square cross-section. In the first instance, it should be appreciated that Hippach fails to cure any of the deficiencies previously noted for Burrows et al. in regard to claim 1 from which claims 15 and 16 depend. The quoted section of Hippach in column 3, lines 68-72, state:

"...supporting the boom 15 is journaled for power driven movement in a vertical plane through an arc of approximately 90°. The boom 15 of the invention includes a cross-sectionally square or rectangular stationary tube 22 rigidly secured to the winch housing 18 with both ends open and extending almost to the gudgeon pins. One or more eccentrically disposed telescoping tubes are received in the square tube 22. The five tubes 30, 31, 32, 33 and 34 are shown that are graduated down in size in that order and the largest one 30 is circular with an outside diameter slightly less than the inside minor dimension of the square tube 22."

Thus, Hippach does not teach wherein each of the sections has a square cross-section as called for in claim 16 and there is no teaching in Burrows et al. or in Hippach that would suggest applying a plurality of nested telescoping sections to the positioning unit 118 of Burrows et al. As stated in *In re Fritsch*, 972 F2d 1260, 23 USPQ 2d 1780 (CAFC, 8, 11, 92)

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination... The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification... Here the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is

rendered obvious. This Court has stated that "[O]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior to deprecate the claimed invention".

Accordingly, claims 15 and 16 should not rightfully be considered obvious over Burrows et al. in view of Hippach.

Claims 17-18 are rejected in paragraph 24 of the Office action under 35 USC § 103(a) as being unpatentable over Burrows et al. as applied to claim 1 above and further in view of Silverman et al (US 5,205,174). Claim 17 further defines the tool as a camera including a hydrolaser for directing a stream of high pressure fluid over the area that the camera is viewing. Claim 18 further defines the hydrolaser as including two spray nozzles located to direct non-interfering streams of high pressure fluid in opposite directions to balance the reaction forces on the camera. Silverman et al. describes a method and apparatus for cleaning and inspecting the bottom surfaces of fluid reservoirs such as large tanks without first draining them, with a remote controlled, submersible vehicle, which removes sediment from the reservoir surfaces by a scrubbing and/or vacuuming process. The reference simultaneously provides video and/or acoustic inspection of the freshly cleaned surfaces. The referenced section in column 6 at lines 8-32 states:

"One embodiment of the scrubbing mechanism, illustrated in the underside view of FIG. 4B, utilizes a rotating brush 33 to break up deposited sediment. The brush may be driven by a geared connection to the propulsion motor 4 or a separate motor may be provided for it. An alternative embodiment of the scrubbing mechanism is the hydrolaser illustrated in FIG. 4C, which utilizes high velocity jets of filtered reservoir fluid to break up deposited sediment. The embodiment shown consists of a manifold of four nozzles 34 mounted to a faceplate 34a on the front of vehicle body 17. The nozzles 34 can be selected to accommodate different spray widths and delivery pressures up to 3000 psi. These would be particularly suitable for highly irregular surfaces. A combination of brushes and hydrolasers, or other dislodging scrubbing mechanisms may also be used.


The vacuum inlet 37 is located in the top surface of the robotic vehicle and connected by flexible part 38 to an external pump (not shown). While a pump may be located

on the vehicle 1 within the purview of the present invention, the added weight and vibration that would result may not be desirable. In the preferred embodiment, the pump is capable of moving up to 300 gallons of sediment and fluid per minute through a 2-3 inch diameter flexible pipe 38 which connects it to the vehicle."

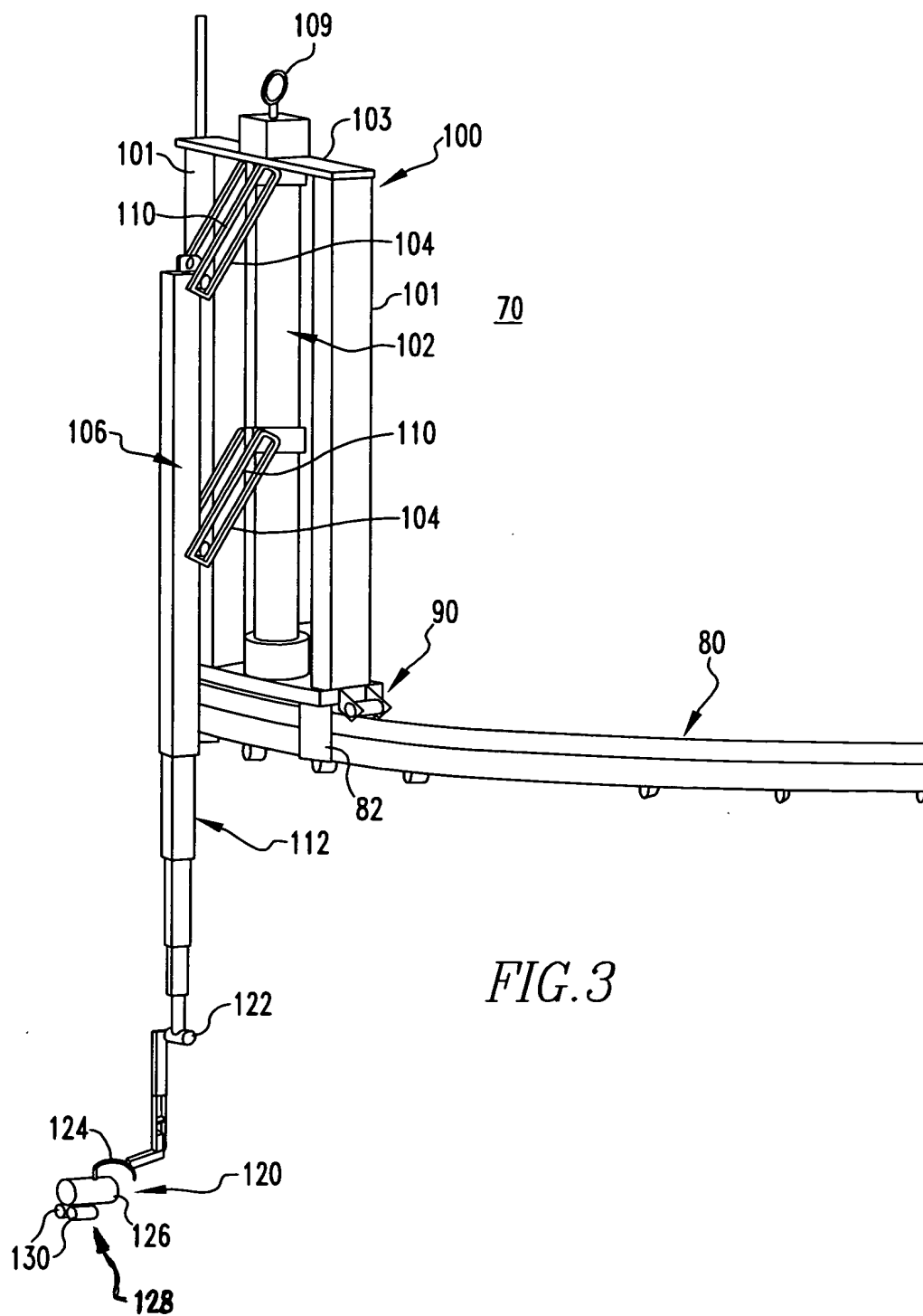
In the first instance, Silverman et al. does not cure any of the deficiencies previously noted for Burrows et al. with regard to claim 1. Furthermore, Silverman et al. teaches a need to clean the surface with the hydrolaser in combination with a vacuum and supports the hydrolaser from a vehicle firmly seated on the bottom of the reservoir. In contrast, Applicants are suspending the hydrolaser from a cantilevered pole over an extended distance. It is respectfully asserted that it would not be obvious to employ a hydrolaser under the conditions set forth in claim 17. Additionally, there is no teaching in Silverman et al. to employing two spray nozzles located to direct non-interfering streams of high pressure fluid in opposite directions to balance the reaction forces on the camera as called for in claim 18. It is respectfully asserted that claims 17 and 18 patentably distinguish over Burrows et al. in view of Silverman et al. for the reasons stated with regard to claim 1 in addition to the individual limitations that they introduce.

Thus, applicants have shown wherein the subject matter of claims 1 through 18 are neither described, shown or taught in the references, either considered individually or in combination; nor should they be considered obvious thereover. Accordingly, reconsideration, allowance and passage to issue of this application are respectfully requested.

Respectfully submitted,

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Attachments



7/7

